

CLAIM AMENDMENTS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-14 (canceled).

15 (currently amended): A laser diode emitting a beam having a profile, comprising:

a vertical resonator; and

a laser diode beam profile shaper having at least one bleaching absorber in said vertical resonator, said at least one bleaching absorber formed as a layer in said vertical resonator, said layer having a thickness approximately equal to a quarter of a material wavelength.

16 (previously presented): The laser diode according to claim 15, including at least one pn junction having a material selected from the group consisting of III-V compound semiconductor material and II-VI compound semiconductor material.

17 (previously presented): The laser diode according to claim 15, wherein said at least one absorber is monolithically integrated into a series of layers.

18 (previously presented): The laser diode according to claim 17, wherein:

said series of layers has a Fabry-Perot resonator; and

said at least one absorber is disposed in said Fabry-Perot resonator.

19 (previously presented): The laser diode according to claim 16, wherein:

said pn junction has a depletion zone; and

said at least one absorber is disposed outside said depletion zone.

20 (canceled):

21 (currently amended): ~~The laser diode according to claim 15, wherein~~ A laser diode emitting a beam having a profile, comprising:

a vertical resonator; and

a laser diode beam profile shaper having at least one bleaching absorber in said vertical resonator, said at least one bleaching absorber is formed as a layer having a thickness greater than a quarter of a material wavelength.

22 (currently amended): ~~The laser diode according to claim 15, wherein~~ A laser diode emitting a beam having a profile, comprising:

a vertical resonator; and

a laser diode beam profile shaper having at least one bleaching absorber in said vertical resonator, said at least one bleaching absorber is formed as a layer in said vertical resonator, said layer having a thickness greater than a quarter of a material wavelength.

23 (previously presented): The laser diode according to claim 15, wherein said at least one absorber has a current constrictor.

24 (previously presented): The laser diode according to claim 23, wherein said current constrictor is a combination of a medium of said absorber with one of the group consisting of an oxide aperture and proton implantation.

25 (previously presented): The laser diode according to claim 15, wherein said at least one absorber has a means for current constriction

26 (previously presented): The laser diode according to claim 25, wherein said current constricting means is a combination of a medium of said absorber with one of the group consisting of an oxide aperture and proton implantation.

27 (previously presented): The laser diode according to claim 16, wherein said pn junction has a p-contact and an n-contact each to be connected to a respective one of two electrical supply leads.

28 (previously presented): The laser diode according to claim 15, wherein said vertical resonator has a means for current constricting.

29 (previously presented): The laser diode according to claim 15, wherein said vertical resonator has a current constrictor.

30 (currently amended): ~~The laser diode according to claim 15, including~~ A laser diode emitting a beam having a profile, comprising:

a vertical resonator;

a laser diode beam profile shaper; and

at least one reflector layer having a relief structure for improving a mode selection.

31 (currently amended): The laser diode according to claim 30 ~~16~~, wherein said relief structure is a Fresnel lens.

32 (previously presented): The laser diode according to claim 15, wherein said vertical resonator has at least one spacer layer.

33 (previously presented): The laser diode according to claim 32, wherein:

said vertical resonator has an absorber layer and an active zone; and

said at least one spacer layer is disposed between said absorber layer and said active zone.

34 (previously presented): The laser diode according to claim 33, wherein at least one layer of said vertical resonator is of one of the group consisting of GaAsN and InGaSbP.

35 (previously presented): The laser diode according to claim 29, wherein:

said vertical resonator has layers; and

at least one of said layers of said vertical resonator is of one of the group consisting of GaAsN and InGaSbP.

36 (currently amended): A laser diode emitting a beam having a profile, comprising:

a vertical resonator;

a means for shaping the beam profile connected to said vertical resonator; and

said shaping means having at least one absorber means for bleaching by decoloring in said vertical resonator, said at least one absorber means formed as a layer in said vertical resonator, said layer having a thickness approximately equal to a quarter of a material wavelength.

37 (currently amended): In an optical system, a laser diode emitting a beam having a profile, the laser diode comprising:

a vertical resonator; and

a laser diode beam profile shaper having at least one absorber layer for bleaching in said vertical resonator, said at least one absorber layer disposed in said vertical resonator, and said absorber layer having a thickness approximately equal to a quarter of a material wavelength.

38 (currently amended): In a compact disc player, a laser diode emitting a beam having a profile, the laser diode comprising:

a vertical resonator; and

a laser diode beam profile shaper having at least one absorber configured to bleach by decoloring in said vertical resonator, said at least one absorber formed as a layer in said vertical resonator, said layer having a thickness approximately equal to a quarter of a material wavelength.

39 (currently amended): In a data transmission system, a laser diode emitting a beam having a profile, the laser diode comprising:

a vertical resonator; and

a laser diode beam profile shaper having at least one absorber for bleaching by decoloring in said vertical resonator, said at least one absorber formed as a layer in said vertical resonator, said layer having a thickness approximately equal to a quarter of a material wavelength.